

Microsoft Access to Oracle Application Express Migration Overview

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INTRODUCTION

Oracle Application Express is a rapid web application development tool for the Oracle database, which combines the qualities of a personal database, productivity, ease of use, and flexibility with the qualities of an enterprise database, security, integrity, performance, scalability, availability, and built for the web. The browser based design time interface, the declarative programming framework, and simple wizards make Oracle Application Express a natural replacement for multi-user desktop database applications such as Microsoft Access.

REASONS TO MIGRATE TO ORACLE APPLICATION EXPRESS

Microsoft Access is a database intended for small projects with a few users, to manipulate data from a Microsoft Windows machine that has Microsoft Access installed. It is not intended as an inherently reliable solution. Such personal databases don't offer the productivity, performance, scalability, manageability or security that companies need for regulatory compliance. Often simple applications grow in size and complexity and become mission critical. These same applications are often scattered throughout the network making maintenance, backups, security, and access increasingly costly and inconsistent. Building a Web-based application that supports a multi-user environment is a more efficient way to manage information. Oracle Application Express can quickly replace unsecured, personal databases and as business grows, the migrated application can easily accommodate additional users and increased volume, and all protected within a secure Oracle database.

MICROSOFT ACCESS MIGRATION PROCESS

The Oracle Application Express Application Migration Workshop is a feature of Oracle Application Express that assists customers in migrating Microsoft Access application to Oracle Application Express. It works in harmony with Oracle SQL Developer Migration Workbench (Migration Workbench) to provide a total solution for your Access Migration requirements. You first use the Migration Workbench to migrate your database schema and data and then use the Application Migration Workshop to migrate your forms and reports. The solution is focused on recovering the design of existing Microsoft Access applications and generating Oracle Application Express applications based on the findings. This sometimes requires manual intervention after the migration tools perform the bulk of the migration work. Your new application can then be refined to take advantage of all the power and capabilities of Oracle Application Express.

MICROSOFT ACCESS MIGRATION COMPLEXITIES

A number of factors can add to the complexity of a migration, such as the existence of Visual Basic (VB) code, poor database design, lack of knowledge on the design and behavior of the original application, and attempting to replicate the original application in a Web-based environment. It is important to analyze the original database and application, and identify the user requirements for the migrated application, in order to establish the complexity of the migration.

MICROSOFT ACCESS MIGRATION OPTIONS

Depending upon the complexity of the Microsoft Access application, and the user requirements defined for the migrated application, the migration process can vary. A Microsoft Access migration typically falls into one of the following scenarios:

Scenario 1: Departmental Reporting

What started off as a personal, mid-sized* desktop database used for reporting departmental information, has now become a mission critical, fragmented, unmanageable, and unsecured application which needs to be shared with other members of your organization, across locations. The data model is normalized and well structured, and the user interface can be replaced with more enhanced reporting capabilities.

In 2 days, you can have your database schema and data migrated to Oracle using the Migration Workbench, and an application built for the Web, using Oracle Application Express wizards to generate the new user interface and take advantage of components such as Interactive reports and charts. Interactive Reporting Regions use Web 2.0 technology to enable dynamic end-user report customization, eliminating the need for many of the reports and queries defined in the original application. Users can alter the layout of report data by displaying the columns they are interested in, applying filters, highlighting, and sorting. An extensive charting engine allows SQL queries to be represented graphically and incorporated into your reports, providing a more effective form of communication. There are also multiple download formats available, including comma-delimited file (CSV) format, Microsoft Excel (XLS) format, Adobe Portable Document Format (PDF), and Microsoft Word Rich Text Format (RTF). Once you have determined the primary purpose and functionality of the original Microsoft Access application, you will see that it is easy to build an application based on the same data and database objects using Oracle Application Express.

* Less than 10 tables, over 20 queries and associated reports, and no VB code.

Scenario 2: Organizational Information Management

The contact management application for your organization, containing sensitive customer information, needs to be made more secure and support a multi-user environment. The application consists of over 30 tables, in a normalized model. The overlying user interface consists of over 30 forms and reports, which now appear dated.

The Application Migration Workshop would prove beneficial to users wishing to retain components of their original application, and also take advantage of the extensive components available in Oracle Application Express. This approach allows you to define the scope of your migration, refine your data model and recover design information from the original application, which can be incorporated into your new Oracle Application Express application. Typically, both the data model and application definition are modified to improve deficiencies and to take advantage of all the features of Oracle Application Express (PDF Printing, Flash Charts, etc). Depending upon the level of customization applied to the generated application, the migration process could be completed within a week.

Scenario 3: Company Accounting Systems

An organization manages its departmental Accounting records using a Microsoft Access application. The database consists of over 40 tables and 100 queries, where the tables are not normalized, which has led to a high level of information duplication. The application consists of over 60 forms and reports, including some third party add-ins for formatting reports and managing authorization on forms. Also, a substantial amount of business logic is held within VB modules.

Where the data model is not properly normalized, and information duplication is prominent, remodeling of the database should be strongly considered. Using the Migration Workbench, the existing database objects and data can be migrated to Oracle within a day. Once in Oracle, you can then spend time modifying the model to improve deficiencies. In instances where the data model has been remodeled, it is recommended that you use the Oracle Application Express wizards to create a new application on the new database model. It is important to understand that there are differences in the user interface of a client/server application and a Web application, so it's best not to try and implement the same user interface in a Web-based environment. Although the original application had over 60 forms and reports, it will most likely be unnecessary to generate an equivalent number of objects in your Oracle Application Express application. Logic contained in VB code could be manually rewritten in PL/SQL. Many Oracle Application Express features such as Interactive reports, built-in authentication schemes, PDF printing, and user interface themes can be used to greatly enhance the new application, and in less than 20 days.

Before undertaking a migration, it is important to have an understanding of the core functionality and purpose of the original application, as well as the underlying data model. You should also have an understanding of the Oracle Application Express user interface. Estimations for a migration task can vary depending on a number of factors, such as the number of forms & reports to be migrated, the chosen method of application generation, and the level of customizations to be applied to the generated application. Regardless of the scenario into which your application may fall, it is advisable that you review the [Oracle Application Express Best Practices](#) White Paper, available on OTN, which provides a collection of best practices on the development, deployment, UI consistency & usability, security and performance of an Oracle Application Express application.

**Oracle Application Express Application
Migration Workshop**

http://www.oracle.com/technology/products/database/application_express/migrations/mig_index.html

**Oracle Application Express Access
Migration Tutorial**

http://www.oracle.com/technology/products/database/application_express/migrations/tutorial.html

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Oracle Application Express References

<http://apex.oracle.com/references>

CONCLUSION

Microsoft Access databases are an inefficient, unsecured method of managing information. A more efficient, scalable, and secure approach to managing information is to use an Oracle database with a Web application as the user interface. Oracle Application Express provides centralized control of company information via a Web-based application that supports a multi-user environment, allowing department level users to generate Web 2.0 applications quickly, with high performance, usability and security.



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